

NORTH RIDING OF YORKSHIRE.

Report of the Medical Officer of Health for the year 1906.

To the County Council of the North Riding of Yorkshire.

Mr. Chairman, my Lords, and Gentlemen,

I have the honour of presenting to you my Report on the health and sanitary condition of the Riding for the year 1906.

During the year, Dr. J. H. Buchanan, who was appointed Medical Officer to the Thirsk Rural Sanitary Authority, July 26th, 1873, died, he was the first gentleman to hold the office, and is succeeded by his son Dr. W. I. Buchanan. Dr. Metcalfe, of Leyburn, after thirty-one years service with the Leyburn Rural Sanitary Authority, he also being the first gentleman to hold the post, resigns and is succeeded by Dr. J. P. Lightfoot. Dr. A. H. Sevier, of the Startforth Rural District, and Dr. E. S. Hawthorne, of the Romalldkirk Division of the Startforth Rural District resign, and are succeeded by Dr. J. C. Neligan, who takes charge of the combined divisions of the District.

The Riding consists of 17 Urban District Councils, with a population at the 1901 Census of 111,475, and estimated at the middle of 1906 to be 121,630, the estimated population at the middle of 1905 was 117,769, giving an increase of 3,861 on the year, and 21 Rural District Councils, with a population at the 1901 Census of 132,583, and estimated at the middle of 1906 to be 133,199, the estimated population at the middle of 1905 was 132,943, giving an increase of 256 on the year. The increase of the whole Riding on the year 1905 is 4,117, as against 1,594 increase from the year 1904 to 1905. The area of the Riding is 1,358,101 acres, and the total population estimated at the middle of 1906, 254,829, equal to 0.187 persons per acre.

The Helmsley Rural District is divided into two Districts, making a total of thirty-nine reports for consideration.

During the year there were registered 6,986 births, 3,971 Urban, and 3,015 Rural, as against 6,850 in 1905, giving an Urban Birth Rate of 32.64 per thousand, and a Rural Birth Rate of 22.63 per thousand, as against 31.85 and 23.30 respectively for 1905. There is an increase of 219 Urban and a decrease of 83 Rural Births on the year 1905, nett increase 136.

The Urban Birth Rate is the highest recorded with the exception of the years 1891 and 1901, it is 0.79 higher than the rate for 1905, 1.10 higher than the average for the previous ten years for the County, 3.94 higher than the average for England and Wales for the same period, and 5.64 higher than the rate for England and Wales in 1906.

The Rural Birth Rate is the lowest recorded with the exception of the years 1899 and 1900, it is 0.67 lower than the rate for 1905, 0.67 lower than the average for the previous ten years for the County, 6.07 lower than the average for England and Wales for the same period, and 4.37 lower than the rate for England and Wales in 1906.

Of deaths there were registered 3,942, 2,054 Urban and 1,888 Rural, as against 3,954 in 1905, giving an Urban Death Rate of 16.88 per thousand, and a Rural Death Rate of 14.17 per thousand, as against 16.99 and 14.69 respectively for 1905. There is an increase of 53 Urban, and a decrease of 65 Rural Deaths on the year 1905, nett decrease 12.

The Urban Death Rate is 0.11 per thousand lower than the rate for 1905, 0.20 higher than the average for the previous ten years for the County, 0.08 higher than the average for England and Wales for the same period, and 1.48 higher than the rate for England and Wales in 1906.

The Rural Death Rate is the lowest recorded with the exception of the years 1902 and 1903, it is 0.52 lower than the rate for 1905, 0.43 lower than the average for the previous ten years for the County, 2.63 lower than the average for England and Wales for the same period, and 1.23 lower than the rate for England and Wales in 1906.

Of deaths due to the "Chief Epidemic Diseases" there were 374, 270 Urban and 104 Rural, as against 267, 205 Urban and 62 Rural in 1905, giving an Urban Death Rate from these diseases of 2.21 per thousand, and a Rural Death Rate of 0.78, as against 1.74 and 0.46 respectively in 1905.

The Urban Rate is the highest recorded with the exception of the year 1893, it is 0.47 higher than the rate for 1905, 0.47 higher than the average for the previous ten years for the County, 0.28 higher than the average for England and Wales for the same period, and 0.48 higher than the rate for England and Wales in 1906.

The Rural Rate is 0.32 higher than the rate for 1905, 0.04 higher than the average for the previous ten years for the County, 1.15 lower than the average for England and Wales for the same period, and 0.95 lower than the rate for England and Wales in 1906.

Of deaths due to Phthisis there were 234, as against 236 in 1905, giving a Phthisical Death Rate of 0.91 per thousand, as against 0.94 in 1905.

Of deaths of Infants under one year of age there were 892, as against 801 in 1905, giving an Infantile Death Rate of 127.68 per one thousand births registered, as against 116.93 in 1905. The rate for England and Wales in 1906 was 133,

Phthisis Death Rate and Infantile Mortality per one thousand Births, 1899-1906.

PHTHISIS DEATH RATE.			INFANTILE MORTALITY.	
1899	...	1.08	153.10	
1900	...	0.87	134.00	
1901	...	0.86	124.60	
1902	...	0.79	112.31	
1903	...	0.88	122.16	
1904	...	0.78	126.91	
1905	...	0.94	116.93	
1906	...	0.91	127.68	

DEATHS FROM THE CHIEF EPIDEMIC DISEASES.

			Total		Rate per thousand.	
	Urban.	Rural.	1906.	1905.	1906.	1905.
Small Pox ...	...	...	...	...	...	...
Measles ...	...	10	15	64	0.05	0.25
Scarlet Fever ...	13	6	19	14	0.07	0.05
Diphtheria and Membranous Croup	41	26	67	56	0.26	0.20
Whooping Cough ...	51	22	73	45	0.28	0.16
Typhoid Fever ...	11	7	18	20	0.07	0.07
Continued Fever ...	2	—	2	—	0.007	—
Diarrhœa ...	147	33	180	68	0.70	0.27
Total,	270	104	374	267		

Table showing the variations in the number of Deaths from the Chief Epidemic Diseases from the year 1905:—

INCREASE.—Scarlet Fever 5, Diphtheria and Membranous Croup 11, Whooping Cough 28, Continued Fever 2, Diarrhœa 112.

DECREASE.—Measles 49, Typhoid Fever 2.

TABLE OF RATES, 1889-1906.

		Birth Rate.		Death Rate.		Death Rate of Chief Epidemic Diseases.	
		Urban.	Rural.	Urban.	Rural.	Urban.	Rural.
1889.	North Riding	24.88		14.71		0.4	
	England & Wales	30.5		17.9		2.1	
1890.	North Riding	28.37	24.06	15.81	15.31	1.89	0.91
	England & Wales	30.5		19.5		2.17	
1891.	North Riding	37.5	27.21	16.0	17.68	1.63	0.95
	England & Wales	31.4		20.2		1.83	
1892.	North Riding	31.8	25.18	16.50	15.81	1.43	0.77
	England & Wales	30.5		19.0		1.90	
1893.	North Riding	31.01	25.70	16.94	16.93	2.30	1.44
	England & Wales	30.8		19.2		2.47	
1894.	North Riding	28.97	23.89	14.09	14.56	0.89	0.79
	England & Wales	29.6		16.6		1.76	
1895.	North Riding	30.30	25.64	16.09	15.37	2.05	0.83
	England & Wales	30.3		18.7		2.14	
1896.	North Riding	30.65	24.57	15.82	14.19	2.00	0.75
	England & Wales	29.7		17.1		2.18	
1897.	North Riding	30.30	25.00	16.32	14.83	1.77	0.88
	England & Wales	29.7		17.4		2.15	
1898.	North Riding	31.21	23.41	15.86	14.70	1.62	0.61
	England & Wales	29.4		17.6		2.22	
1899.	North Riding	30.31	21.14	17.37	14.82	1.93	1.11
	England & Wales	29.3		18.3		2.21	
1900.	North Riding	31.66	22.25	17.60	15.23	1.78	0.70
	England & Wales	28.9		18.3		2.00	
1901.	North Riding	32.79	23.42	17.02	14.23	1.49	0.97
	England & Wales	28.5		16.9		2.05	
1902.	North Riding	31.92	24.12	15.96	14.06	1.58	0.47
	England & Wales	28.6		16.3		1.64	
1903.	North Riding	32.52	23.02	16.84	13.78	1.66	0.55
	England & Wales	28.4		15.4		1.46	
1904.	North Riding	32.24	22.85	17.07	15.52	1.92	0.90
	England & Wales	27.9		16.2		1.94	
1905.	North Riding	31.85	23.30	16.99	14.69	1.74	0.46
	England & Wales	27.2		15.2		1.52	
Average 1896-1905—							
	North Riding	31.54	23.30	16.68	14.60	1.74	0.74
	England & Wales	28.7		16.8		1.93	
1906.	North Riding	32.64	22.63	16.88	14.17	2.21	0.78
	England & Wales	27.0		15.4		1.73	

The Birth Rate in England and Wales in 1906 was 27.0 per thousand of the population, which is 0.2 per thousand below the rate in 1905, and lower than the rate in any other year on record, compared with the average in the ten years 1896-1905, the Birth Rate in 1906, shows a decrease of 1.7 per thousand.

The Death Rate in 1906 was 15·4 per thousand, which was 0·2 per thousand above the rate in 1905, compared with the average rate in the ten years 1896-1905, the Death Rate in 1906 shows a decrease of 1·4 per thousand.

The Rate of Mortality among Infants under one year of age to one thousand registered births was 133, which is 5 per thousand above the rate in 1905. Compared with the average in the ten years 1896-1905, the rate of Infantile Mortality shows a decrease of 14 per thousand.

The Death Rate from the Chief Epidemic Diseases was 1·73 per thousand living, against 1·46, 1·94, and 1·52 respectively in the three preceding years.

Number of cases of Notifiable Diseases reported :—

	Urban.		Rural.		Total.		Attack rate per thousand.	
					1906.	1905.	1906.	1905.
Small Pox	...	1	...	—	1	2	—	—
Scarlet Fever	...	721	...	297	1018	1240	3·99	4·94
Diphtheria	...	259	...	258	517	428	2·02	1·70
Membranous Croup...	...	14	...	1	15	15	0·05	0·05
Typhoid Fever	...	98	...	46	144	113	0·56	0·45
Continued Fever	...	33	...	—	33	5	0·12	0·01
Erysipelas	...	122	...	73	195	196	0·76	0·78
Puerperal Fever	...	6	...	5	11	6	0·04	0·02
Total	1254		680		1934	2005		

INCREASE.—Diphtheria 89, Typhoid Fever 31, Continued Fever 28, Puerperal Fever 5.

DECREASE.—Small Pox 1, Scarlet Fever 222, Erysipelas 1.

Districts in which the following Epidemic Diseases have occurred.

Measles.	Scarlet Fever.	Diphtheria and Membranous Croup.	Typhoid Fever.	Whooping Cough.	Small Pox.
Lofthus Reeth Whitby Urban Wath Northallerton Rural Eston Scalby Croft Ormesby Helmsley Helmsley (Oswaldkirk Division) Pickering Rural Stokesley South Bank in Normanby Flaxton Kirbymoorside Easingwold Aysgarth Thirsk Scarborough Rural	Leyburn Guisborough Rural Guisborough Urban Lofthus Redcar Saltburn Skelton and Brotton Reeth Whitby Urban Malton Urban Kirklington and Upsland Masham Startforth Middlesbrough Rural Northallerton Rural Eston Scalby Ormesby Northallerton Urban Pickering Urban Helmsley Helmsley (Oswaldkirk Division) Pickering Rural Stokesley Malton Rural South Bank in Normanby Flaxton Whitby Rural Thornaby-on-Tees Kirbymoorside Easingwold Aysgarth Thirsk Bedale Richmond Scarborough Rural	Leyburn Guisborough Rural Lofthus Redcar Saltburn Skelton and Brotton Whitby Urban Malton Urban Kirklington and Upsland Startforth Wath Northallerton Rural Eston Scalby Croft Ormesby Northallerton Urban Pickering Rural Stokesley Malton Rural South Bank in Normanby Flaxton Whitby Rural Thornaby-on-Tees Easingwold Aysgarth Thirsk Bedale Richmond Scarborough Rural	Leyburn Guisborough Rural Redcar Skelton and Brotton Reeth Whitby Urban Malton Urban Startforth Wath Northallerton Rural Eston Ormesby Northallerton Urban Pickering Urban Stokesley Malton Rural South Bank in Normanby Flaxton Whitby Rural Thornaby-on-Tees Easingwold Aysgarth Thirsk Bedale Richmond Scarborough Rural	Leyburn Guisborough Rural Lofthus Redcar Skelton and Brotton Reeth Whitby Urban Malton Urban Eston Scalby Ormesby Stokesley South Bank in Normanby Whitby Rural Thornaby-on-Tees Kirbymoorside Easingwold Aysgarth Thirsk Bedale Richmond Scarborough Rural	South Bank in Normanby

Whooping Cough and Measles are notified in the Thirsk District, and Measles in the Helmsley Districts.
One case of Anthrax occurred in the Scarborough Rural District, and one-fatal-in the Northallerton Rural District.

The following Authorities have not yet made provision for the Isolation of Infectious Diseases :—

URBAN.—Hinderwell, Kirklington and Upsland, Malton, Masham, Pickering.

RURAL.—Aysgarth, Easingwold, Helmsley, Kirbymoorside, Leyburn, Malton, Pickering, Reeth, Richmond, Thirsk, Whitby.

SPECIAL REPORTS.

DATE.	MEDICAL OFFICER.	DISTRICT.	SUBJECT.
January 3rd	Dr. Buchanan ...	Thirsk ...	Scarlet Fever
„ 25th	Dr. Raimes ...	Flaxton ...	Measles
February 6th	Dr. Colby ...	Malton Rural ...	Whooping Cough
March 6th	Dr. Colby ...	Malton Rural ...	Diphtheria
„ 27th	Dr. Eddison ...	Bedale ...	Diphtheria, Erysipelas
April 19th	Dr. Colby ...	Malton Rural ...	Diphtheria
„ 24th	Dr. Eddison ...	Bedale ..	Scarlet Fever, Diphtheria
May 1st	Dr. Buchanan ..	Thirsk ..	Diphtheria
„ 5th	Dr. Lightfoot ...	Leyburn ...	Scarlet Fever, Erysipelas
„ 15th	Dr. Laverick ...	Whitby Rural ..	Diphtheria
„ 16th	Dr. Cockcroft ..	Masham ...	Sanitary
„ 22nd	Dr. Lightfoot ...	Leyburn ...	Whooping Cough, Erysipelas, Scarlet Fever
June 18th	Dr. Glen ...	South Bank in Normanby	Small Pox
„ 28th	Dr. Buchanan ...	Thirsk ...	Skin Disease
July 4th	Dr. Sayer ...	Kirklington and Upsland...	Diphtheria
„ 6th	Dr. Laverick ...	Whitby Rural ...	Sanitary
„ 23rd	Dr. Robertson ...	Pickering Urban ..	Measles
August 7th	Dr. Lightfoot ...	Leyburn ...	Scarlet Fever
„ 23rd	Dr. Lightfoot ...	Leyburn ...	Whooping Cough
Sept. 11th	Dr. Eddison ...	Bedale ...	Typhoid Fever
„ 18th	Dr. Lightfoot ...	Leyburn ..	Scarlet Fever, Whooping Cough
October 2nd	Dr. Lightfoot ...	Leyburn ...	Scarlet Fever
„ 7th	Dr. Porter ...	Helmsley ...	Measles
„ 8th	Dr. Lightfoot ...	Leyburn ...	Typhoid Fever, Diphtheria, Scarlet Fever
„ 9th	Dr. Eddison ...	Bedale ...	Diphtheria
„ 12th	Dr. Stainthorpe ...	Loftus ...	Measles
„ 17th	Dr. Hutchinson ...	Northallerton Rural ..	Epidemic Catarrh
„ 19th	Dr. Lightfoot ...	Leyburn ...	Scarlet Fever
„ 31st	Dr. Yeoman ...	Stokesley ...	Water
„ 31st	Dr. Porter ...	Helmsley ..	Measles, Scarlet Fever, Water
Nov. 8th	Dr. Porter ..	Helmsley ...	Measles
„ 23rd	Dr. Colby ...	Malton Rural ...	Sanitary
„ 24th	Dr. Buchanan ...	Thirsk ...	Measles
„ 29th	Dr. Raimes ..	Flaxton ...	Measles
December 4th	Dr. Eddison ...	Bedale ...	Diphtheria
„ 4th	Dr. Jackson ...	Ormesby ..	Scarlet Fever

SMALL POX. One case in the South Bank in Normanby District, Dr. Glen, writes, “In June
“last a case of Small Pox occurred at Normanby. The patient—seafaring man—was a
“native, and had come home on a visit to his mother. The ship he was in had left Spain
“just two weeks ere he was laid up and there is little doubt but that he got the infection
“while in Spain. As soon as possible the patient was removed to the Small Pox Hospital
“and the other residents in the house were re-vaccinated, and the premises were thoroughly
“disinfected. Fortunately no other case occurred.”

SCARLET FEVER occurred in 36 Districts, 1,018 cases being reported with 19 deaths. The
attack rate per one thousand of the population being 3·99, the death rate per thousand
0·07, and the death rate of persons attacked 1·86 per cent.

Twelve cases in the Leyburn District, no deaths, as there is no provision in the
district for the isolation of infectious diseases, two cases which occurred at Constable
Burton were removed to the Bedale Hospital, school at Spennithorne closed. Forty-three
in twenty-five houses in the Guisborough Rural District, one removed to Hospital, three
deaths, fifteen of the cases occurred in Wilton, five in Marske, two in Hutton, two in
Danby, three in Newton, two in Morton, thirteen in Kirkleatham, and one in Easington.
Twenty-six in twenty-three houses in the Guisborough Urban District, three removed to
Hospital, one death. Twenty-two in the Loftus District, one death, twelve of the cases
occurred at Loftus in eleven houses, eight in seven houses at Liverton Mines, one at Carlin
How and one at Old Liverton. Forty-two in thirty houses at Redcar, thirty removed to
Hospital, no deaths. Writing on the variation in the attack rate in the respective
districts of the Guisborough Union, Dr. Stainthorpe, says, “The variation in the attack
“rate is due largely to variation in local conditions. In an urban district where the bulk
“of the population is of one class, engaged in the same industry, having many things in

“common, there is much more communication between families than in a rural district where there is not the same opportunity of frequent visits, or in an urban district with a mixed population. It will be readily understood that in the first-named class of district the spread of fever due to the visits of neighbours to infected houses or of the infected to neighbours’ houses will be greater than in the other named districts. Another factor in the rate variation is house accommodation. In very few of the dwellings of the industrial classes is it possible to carry out such isolation as is requisite to check the spread of infection. A third factor influencing the variation in the attack rate is the extent to which the residents of a town are open to receive infection either by contact with infected persons outside the district or by contact with such persons coming into it. The very large number of persons living in Redcar whose place of business is outside its area, and the still larger number who visit it in the season, renders this town specially susceptible to the contraction of infectious diseases. Compare such a place with a village some distance from a railway station, and the variation in the attack rate from Scarlet Fever and other similar infectious diseases is easily appreciated.” Thirteen cases in ten houses at Saltburn, no deaths. Thirty-four in twenty-nine houses in the Skelton and Brotton District, no deaths, two of the cases occurred at Carlin How, nineteen at Brotton, three at Lingdale, one at New Skelton, one at North Skelton, two at Skelton, three at Skelton Green, one at Margrove Park and two in detached houses. One case in the Reeth District. Forty-four in thirty-one houses at Whitby, eight being in one house, thirty-three removed to Hospital, no deaths, two cases were of mixed infection having a scarlet fever rash followed by diphtheritic paralysis and one developed chicken pox. Twelve cases at Malton, no deaths, and one at Kirklington. One at Masham and two at Ilton in the Masham District, one in the Startforth District, and three in the Middlesbrough Rural District, removed to Hospital, no deaths. Ten in the Northallerton Rural District, three imported, one death, one of the cases occurred at Deighton, two at East Cowton, two at Hutton Bonville, one at Little Smeaton, one at Great Smeaton, and three at Danby Wiske. One hundred and twelve cases in the Eston District, sixty-six removed to Hospital, two deaths, Dr. Fulton, writes, “This disease was very prevalent and continues to spread in every part of your district, due no doubt to the mildness of the disease, want of care by parents, and cases being overlooked, missed by parents and doctor. Two deaths occurred. Children who have sore throats and are sick (vomit) should be sent home from school, and a note sent to the doctor.” Five in the Scalby District, and one hundred and sixty-one at Ormesby, eleven removed to Hospital, four deaths, schools closed, twelve houses had two cases each, ten three cases each, and two five cases each, Dr. Jackson, writes, “I am clearly of opinion that the chief sources of infection were the mild or unrecognized cases which were never notified, or notified very late in the course of the illness. There has been for some years past considerable difficulty experienced in dealing with certain infectious cases arising in the North Ormesby Hospital and Orphanage. Parish cases, and those belonging to the District, can be removed to the Sanatorium without much trouble, as for the remainder no authority seems inclined to be responsible. In consequence of this difficulty I communicated with the Council of the North Ormesby Hospital, and suggested that a detached Cottage, which they have within their grounds, should be altered and fitted up as a small Isolation Hospital. The Council consented to do this. A patient was brought from Skelton to the North Ormesby Hospital suffering from Scarlet Fever. The Hospital Authorities not being able to isolate the girl, she was sent back home in an Ambulance. In two, or if not three cases in North Ormesby, the infection was traced to this case.” Four cases, one imported, at Northallerton, no deaths, and sixty at Pickering, one death, the fever was prevalent during the whole of the year with the exception of the months of February and April. One in the Helmsley District, and ten in the Oswaldkirk Division of the Helmsley District, no deaths. Eleven cases in the Pickering Rural District, seven being at Elberston, one death. Thirty-seven in the Stokesley District, fifteen removed to Hospital, no deaths, eleven of the cases occurred at Kildale, seven at Nunthorpe, four at Great Ayton, four at Great Broughton, three at Bilsdale, three at Little Ayton, two at Yarm, and one each at Picton, High Worsall, and Kirkby, schools closed at Nunthorpe and Kildale. Eighteen in the Malton Rural District, chiefly in Sheriff Hutton and Hovingham, no deaths. Sixty-seven in the South Bank in Normanby District, one removed to Hospital, one death, Dr. Glen, writes, “As usual the great difficulty experienced in dealing with these mild cases treated at home, is getting the patients completely isolated for a sufficient length of time. The patients after two or three days, feel well and then they want to get the run of the house as usual, and not only so, but in fine weather get out unless they are most carefully watched.” Five in the Flaxton District probably imported, two removed to Hospital, and fourteen in the Whitby Rural District, no deaths. One hundred and fifteen cases at Thornaby-on-Tees, eighteen removed to Hospital, three deaths. Twenty-four in the Kirbymoorside District, three being at Kirbymoorside, nine at Nunnington, schools closed, five at Ness, one at Muscoates, and six at Salton, school closed, no deaths. Thirteen in the Easingwold District, no deaths, and eighteen in the Aysgarth District, no deaths, the last five cases were isolated in a hut erected at the expense of Dr. Hime, Cross Lane and Aysgarth Schools closed. Forty-six in the Thirsk District, Thornton-le-Moor School closed, one death, seven of the cases at Thirsk were contracted in the “Shows” at the time of the Martinmas Hirings. Seven in the Bedale District, one being at Langthorne contracted outside the district, two at Leeming Bar, two in Low Street, one at Fencote, and one at Scruton, no deaths. Eleven in the Scarborough Rural District, no deaths, Dr. Candler-Hope, writes, “The whole question of closing schools on account of infectious disease has been raised more than once lately, and it has been contended that under no circumstances is it any use to close a school in the hope of checking the spread of such cases. Statistics have been compiled to show that where an attack has begun before, and continued over a holiday, as

"many cases have been notified during and after as before the holiday. The inference according to these authorities is that schools have very little to do with spreading infection. That is the experience only or mostly of men working in towns. In the country there is ample proof that the school is the centre from which the disease spreads, and that closing such a place in time has the effect of checking the outbreak." Twelve cases in the Richmond Rural District, five being at Marske, four in one house, one at Sedbury, and six at Gilling West, no deaths.

TYPHOID FEVER occurred in 26 Districts, 144 cases being reported with 18 deaths. The attack rate per one thousand of the population being 0·56, the death rate per thousand 0·07, and the death rate of persons attacked 12·50 per cent.

There were also notified 33 cases of Continued Fever in the South Bank in Normanby District with 2 deaths.

Two cases in the Leyburn District, one at Middleham and one at Hunton. Three in Marske in the Guisborough Rural District, one imported, one at Redcar, and one at Skelton in the Skelton and Brotton District. Dr. Stainthorpe writing of the Guisborough Union Combined Districts says, "This number is the lowest notified in any one year since the adoption of the Notification Act. It is equally satisfactory to be able to record that not a single death from Enteric Fever occurred during the year. This is the first time during my tenure of office, over 24 years, that in compiling an annual report, I have been in the position to make such a statement." One case at Grinton in the Reeth District, and two at Whitby, both imported. One at Malton, and one imported in the Startforth District. One at Asenby in the Wath District, probably due to drinking water from a polluted well, the well was closed, and two at Morton and one at Pepper Arden in the Northallerton Rural District, imported. Thirty-two cases in the Eston District, twenty-two removed to hospital, one death. Thirteen at Ormesby, two removed to hospital, three deaths. Two at Northallerton, one removed to hospital, Dr. Baigent writes, "The most noteworthy feature of the year, from a sanitary point of view, is the entire absence of Typhoid Fever, attributable to or contracted in the area. Two cases were notified, but in both instances I was able to satisfy myself that the disease had been contracted away from Northallerton, the patients returning when sickening for the disease. This, I think, is the first report for many years containing no record of this disease contracted in the area. Last year the number of these cases was low, viz.: 7, the average for the previous seven years being 15 cases." One case at Pickering, one at Hutton Rudby in the Stokesley District, and three in the Malton Rural District. Twenty-two cases of Typhoid Fever and thirty-three of Continued Fever in the South Bank in Normanby District, two deaths from the former and two from the latter, Dr. Glen writes, "The cases both of Continued Fever and Enteric occurred mostly during and after the great heat experienced in the Autumn of last year. Also the great majority of the cases were in the older part of the town. In the days when the back streets in these localities were unpaved, the subsoil was more or less infiltrated with filth, and it is just possible that the great heat beating on the surface of the streets caused effluvia of an unwholesome nature to emanate." Seven in the Flaxton District, no deaths, two of the cases occurred in the North Riding Asylum, two at Huntington, two at Haxby, where the drinking water was found to be contaminated with sewage, and one at Flaxton. Seven in the Whitby Rural District, one death, and twenty-three at Thornaby-on-Tees, four deaths. One case in the Easingwold District and two in the Aysgarth District, both fatal, one of the cases was imported. Three in the Thirsk District, one death, one of the cases was that of an epileptic who, whilst in a convulsion fell into the water in the vicinity of a sewer and swallowed a quantity of the water. Four in the Bedale District, all in an isolated farmhouse, probably contracted at the village feast, one death. One case, fatal, in the Scarborough Rural District. Six in the Richmond Rural District, one being at Catterick, two at Eppleby, one at Colburn, and two at Tunstall, no deaths, Dr. Williams writes, "In the beginning of November a case occurred at Tunstall and was that of a female aged 24 years, making the fourth case in the one family in three years, the first two succumbing to the disease. Shortly after the latter event the family removed to another house some two hundred yards off, which was considered a more healthy situation. But unfortunately the nearest available drinking water was obtained from a dish well which was frequently polluted with organic matter, and should on no account be drunk. The other source of supply is about two hundred yards off, and although I was given to understand that the water from the former was not used for dietetic purposes, the temptation to do so must be very great when the nearness of the same is taken into account. And I must repeat once more that the only way to prevent people drinking polluted water is to provide them with a pure supply at a reasonable distance."

DIPHTHERIA AND MEMBRANOUS CROUP occurred in 31 Districts, 532 cases being reported with 67 deaths. The attack rate per one thousand of the population being 2·08, the death rate per thousand 0·26, and the death rate of persons attacked 12·59 per cent.

Five deaths were registered under the head of "Croup."

One case of Diphtheria in the Leyburn District. Fourteen in ten houses in the Guisborough Rural District, two deaths, also two deaths registered as "Croup," eleven of the cases occurred in Marske, one in Hutton, and two in Danby. Two in two houses at East Loftus in the Loftus District. Forty-two in thirty-six houses at Redcar, two deaths, Dr. Stainthorpe, writes, "The number of diphtheria cases (42) is considerably in excess of that of any year since the adoption of the Notification Act, 1892. In fact the total number reported during the fourteen years 1892-1905, was less than that notified during the past year. Many of the cases appear to have been of a very mild type. This may

"have been one of the factors in the spread of the disease. On October 2nd, I reported
 "as follows to the Council, "Yesterday afternoon I received a notification of a case of
 "diphtheria. In the evening about 5-15, I called at the house. At that time the patient,
 "a boy 11 years of age, was playing with other children in the street. This is a contra-
 "vention of Section 126 of the Public Health Act, 1875." No action was taken thereon."
 Four cases in four houses at Saltburn, one death, and nine in nine houses in the Skelton
 and Brotton District, four deaths, six of the cases occurred at Brotton, one at Moorsholm,
 one at Skelton and one in a detached house. Thirteen at Whitby, four removed to
 Hospital, no deaths, and one at Malton. Two at Kirklington, one death, and five in the
 Startforth District, one death. One case at Hutton Conyers in the Wath District,
 contracted outside the district. Twenty-one in the Northallerton Rural District, two
 deaths, also one registered as "Croup," two of the cases occurred at South Cowton, two
 at Ainderby Steeple, seven at Danby Wiske, one at Ellerbeck, three in one house at
 Romanby, apparently due to a neglected cesspool, two at Brompton, two at Sowerby-
 under-Cotcliffe, and two at Winton. Dr. Hutchinson, writes, "The six cases of diphtheria
 "notified at Danby Wiske, in the month of February, were all members of one family
 "occupying a small house in which satisfactory isolation was impossible. The cases were
 "severe and the entire household of 13 were treated with anti-diphtheritic serum with
 "satisfactory results, all these attacked made good recoveries and only one child
 "subsequently developed the disease in a very mild form. The outbreak was apparently
 "due to the too close proximity, and overstocking of a poultry run where fowls had
 "previously died of a throat disease, probably of the same character. The poultry run
 "has since been removed to a more suitable distance. No further cases occurred in the
 "village, which is satisfactory evidence of efficient disinfection and isolation. Isolation
 "of the household in outbreaks, such as this, is usually complete enough without
 "interference by your officers. In ordinary cases of illness, neighbourly sympathy and
 "help are always forthcoming in our villages, but in presence of infectious disease, the
 "promptings of charity are usually overcome by those of self preservation, and afflicted
 "households are left severely alone. When such households are large enough and capable
 "enough to deal with their difficulties, without outside help, isolation is not the same
 "painful fact that is felt so keenly in small and crippled homes. To the latter, an out-
 "break of infectious disease is a calamity that can be realized only by those who have
 "experienced it. None but those immediately concerned know how difficult it is to secure
 "help from neighbours however near in these cases, and not unnaturally for the presence
 "of infectious disease in a village is a danger to the Public Health—it is therefore a public
 "concern and when proper isolation and proper care cannot be provided within the
 "household, it should undoubtedly be undertaken by the Authority responsible for the
 "Public Health of the district." Sixty-two cases in the Eston District, fifteen removed
 to Hospital, seven deaths. Seven in the Scalby District, no deaths, Dr. Forman, writes,
 "All were school children attending Scalby school, and were in houses scattered all over the
 "district. Probably they were all infected from one primary cause, but one could not say
 "definitely what was the cause of the primary case. The main drain up Hay Brow Road may
 "have been the cause, especially as at that time it was not ventilated. Some short time before
 "the outbreak the school yard had been dug up. Sub-soil, if disturbed, especially after
 "a dry season, sets up gases and also bacteria. This would tend to lower the vitality of
 "the children, and so predisposes them to contract the disease more easily. Diphtheria
 "very often breaks out in communities after a dry season, which points to the lowering
 "of the sub-soil water having some influence. The closing of the Day School and Sunday
 "Schools for a time had a great effect on the outbreak, which soon abated." Four cases
 in the Croft District, two removed to Hospital, owing to an epidemic of sore throat
 amongst the children at Barton the National School was closed for fourteen days in
 October. Thirty-three at Ormesby, three removed to hospital, six deaths, in several
 instances where there was a large family, antitoxin was used as a prophylaxis, with very
 beneficial results. Twenty cases of Diphtheria and one of Membranous Croup at North-
 allerton, sixteen of those of Diphtheria occurring in the first half of the year, no deaths,
 one death however was registered as "Croup." Thirteen cases of Diphtheria and one of
 Membranous Croup in the Pickering Rural District, one death, the chief seat of the out-
 break was at Tow Row, Rosedale Abbey, where the surroundings of the houses are in the
 most insanitary condition, the privies are dilapidated and only about twelve feet from the
 back doors of the cottages, instructions have been given for these to be converted to the
 pail system. Eighteen in the Stokesley District one removed to hospital, four deaths,
 twelve of the cases occurred at Ayton, probably due to closing the ventilating openings in
 the sewers, four at Yarm, and one each at Seamer and Easby. Twenty-four cases
 in the Malton Rural District, one death. Writing on the cases of notifiable
 diseases reported, Dr. Colby says, "The most numerous and serious were Diphtheria,
 "and occurred in the neighbourhood of Thornton-le-Clay and in the parish of
 "Welburn. The former group were undoubtedly associated with school attendance
 "and spread by it. One case was fatal. An interesting and well-known fact came out
 "in this connection, namely, that a preventive injection of antitoxin protects only for
 "two weeks or at most three, still it should always be done, as it causes a check to the
 "spread of disease and enables other measures to be taken. All the cases in the second
 "group were, with two exceptions, in the Castle Howard Reformatory School. This
 "institution has its own medical officer, is further visited by an official inspector, but it
 "was in an appalling sanitary condition, having been neglected or just patched here and
 "there for a number of years, and even then with little or no skill, moreover some parts
 "are old and structural defects are not few, in fact, the place is just the ideal one for
 "disease to spread in when once introduced. Deficiency of light and ventilation, coupled
 "with damp, enable putrefaction to occur in organic matter whether in large or small

"quantities, and though specific diseases do not thus arise, yet the people who live under these conditions have their vitality lowered and are less able to resist disease of any kind. However it is now in the hands of a strong committee, whose actions are well advised, and it will certainly be put in good order." Thirty-two cases of Diphtheria and two of Membranous Croup in the South Bank in Normanby District, eleven deaths, one death was also registered as "Croup." Seven in the Flaxton District, one removed to Hospital, no deaths, three of the cases occurred at Haxby due to defective drainage, and one each at Strensall, due to defective drainage, Towthorpe, Warthill, due to defective drainage, and the North Riding Asylum. Fifteen in the Whitby Rural District, two deaths, Dr. Laverick writes, "The outbreak of Diphtheria at Roxby in the spring was the cause of at least two deaths. I made a house to house inspection of the village, and found the whole in very fair condition, except that in four cases a sink waste-pipe from the inside of the house communicated directly with the sewer. I also found that the sewer from these houses opened into a highway drain on the roadside at a point where the school children were in the habit of playing. I met the local landlord, who very promptly had these matters remedied, and now this hamlet is in a very good sanitary condition." Thirty-two cases of Diphtheria, three removed to Hospital, and eleven of Membranous Croup at Thornaby-on-Tees, Infant department of the National School closed, nine deaths. Three cases in the Kirbymoorside District, and fifty in the Easingwold District, five deaths, it was prevalent during the whole of the year at Easingwold, and Dr. Hicks suggests that the services of the Attendance Officer should be utilised in bringing to the notice of the sanitary authority mild cases which otherwise evade notification, and writes, "Some people are attributing the outbreak of Diphtheria to the turning up of unhealthy soils, and I should hesitate before I ventured to differ from their opinion too decidedly." Seven in the Aysgarth District, no deaths, and seven in the Thirsk District, two contracted outside the district and four due to insanitary surroundings, one death. Thirty-seven cases in the Bedale District, eight removed to Hospital, five deaths, Dr. Eddison, writes, "This epidemic has been prevalent in most of the North Riding Districts, in our own, Bedale has borne the brunt of the attack. In my opinion the antiquated methods of scavenging the town and dealing with the ash-pits, are in a great measure responsible for this." Seven cases in the Scarborough Rural District, one death, and twenty-four in the Richmond Rural District, one death, Middleton Tyas School closed.

MEASLES were reported from 21 Districts, the number of deaths being 15, giving a death rate of 0·05 per thousand.

Two deaths in the Loftus District, and prevalent at Reeth, Arkengarthdale, and Fremington in the Reeth District, schools closed. Prevalent late in the year at Whitby, Cliff Street Girls' and Infants' School, the Mount, St. John's Infants' and Boys' and Cholmley Schools closed, no deaths. Prevalent at Swinton, Fearby, Healey, and Breary Banks in the Masham District, schools at Kell Bank and Breary Banks closed, one death. Epidemic at Baldersby, Rainton, and Wath in the Wath District, schools closed, and prevalent in the Northallerton Rural District, necessitating the closing of certain schools. One death in the Eston District, and a few cases in the Scalby District. One at Ormesby. Two hundred and seventy-five cases in the Helmsley District, no deaths, writing on the value of notification of Measles which was in force in his Districts until recently, Dr. Porter, says, "The value of notification seems to be small. The prophylaxis of Measles is especially difficult owing to its extreme infectiousness before the symptoms are characteristic. Another difficulty is that people generally do not regard Measles as anything of a very serious nature, and consequently medical men are not called in. Measles being so very infective before any appearance of the rash, children may be exposed to the infection without those in charge of them being aware of the exposure, and it is only by dealing with the early cases, that the spread of an epidemic can be controlled. Notification up till now, has been very unsuccessful in checking epidemics of Measles in England, and I think that whilst the information may be useful in regard to closing schools, even that does not seem very effectual and notification is not followed by any diminution of epidemics." Five cases in the Oswaldkirk Division of the Helmsley District. An outbreak at Marton in the Pickering Rural District, school closed, one death, one death in the Stokesley District, and prevalent during the early months of the year in the South Bank in Normanby District, most of the cases being of a mild character, no deaths. Prevalent in the Flaxton District, schools closed at Huntington, Stockton-on-Forest, Sand Hutton, and Gate Helmsley. Epidemic at Kirbymoorside, Wombledon and Nunnington in the Kirbymoorside District, schools closed, one death. Three deaths in the Easingwold District, and prevalent at Bainbridge in the Aysgarth District, school closed. Two hundred and thirty-two cases in the Thirsk District, Topcliffe School, St. Oswalds, Sowerby, the National, the British and Foreign, the Infants, and All Saints' Roman Catholic, Thirsk, closed, four deaths. Prevalent in the Scarborough Rural District and the Richmond Rural District, no deaths.

WHOOPING COUGH was reported from 22 Districts, the number of deaths being 73, giving a death rate of 0·28 per thousand.

One death in the Leyburn District, schools at Hunton and West Witton closed. Two in the Guisborough Rural District, one in the Loftus District, four at Redcar, and one in the Skelton and Brotton District. One in the Reeth District, four at Whitby, one at Malton, and nine in the Eston District. Prevalent in the Scalby District, no deaths, thirteen at Ormesby, and three in the Stokesley District, schools closed at Kildale, Hutton Rudby, Crathorne, and Whorlton. Seven in the South Bank in Normanby District, two in the Whitby Rural District, eleven at Thornaby-on-Tees, and prevalent at Kirbymoorside, Hutton-le-Hole, and Wombledon in the Kirbymoorside District, two deaths. Three deaths in the Easingwold District, and prevalent at Carperby in the Aysgarth District,

school closed. Four cases in the Thirsk District, where the disease is notifiable, and seven deaths in the Bedale District. Outbreaks in the Scarborough Rural District, and at Scorton, Bolton, Ellerton, and Hipswell, school closed, in the Richmond Rural District, one death.

DIARRHOEA caused 180 deaths, giving a death rate of 0·70 per thousand.

Nine deaths in the Guisborough Rural District, four in the Guisborough Urban, eleven in the Loftus District, eight at Redcar, one at Saltburn, and nine in the Skelton and Brotton District. One at Malton, and two in the Wath District, one of which at Melmerby was probably due to drinking water from a polluted well, the well was closed. Two in the Northallerton Rural District, and ten in the Eston District. Dr. Jackson, Ormesby, writes, "An epidemic probably unequalled in recent years visited this District and the surrounding Districts this year. Forty-four deaths occurred, thirty-nine being in infants under one year of age. For about ten days we had excessive rainfall, commencing on the 7th of August, followed by a week or more of abnormally high temperature. As a result of the rain, the drinking water became very discoloured with peaty and other suspended matter, and it is well known that water of this kind will cause Diarrhoea in susceptible individuals. At this time the inhabitants were warned to boil the water. The heat, either directly, or more often indirectly, by causing the decomposition of milk and other food stuffs, by increasing the effluvia from ashpits and pans has been the most potent factor. The hot weather brought out quite a plague of flies, and they greatly assist in the contamination of food, especially when the midden or closet is only a few feet away from the pantry and kitchen. For this reason removal of night soil should be done at more frequent intervals during the summer months." Five deaths at Northallerton, two in the Pickering Rural District, five in the Stokesley district, and two in the Malton Rural District. Eleven in the South Bank in Normanby District, three in the Whitby Rural District, and forty-three at Thornaby-on-Tees, Dr. Watson writes, "The infantile mortality from diarrhoeal diseases is constantly too high, though it may be a high birth rate is too often associated with a correspondingly high death rate. The investigation I made towards the end of 1905 showed that in only about a fourth of the fatalities from Diarrhoea were the babies fed on nature's food—the mother's breast milk. This is practically the reverse of what ought to be the rule. When the responsibilities of motherhood are better realised and practised, we may look for better results in the saving of precious lives." One death in the Kirbymoorside District, two in the Easingwold District, three in the Scarborough Rural District, and two in the Richmond Rural District.

WATER SUPPLIES.

In the Leyburn District the supply to Hunton is from pumps, some of the wells receive surface water from the surrounding ground, making the supply unfit for consumption, that of Bellerby is unsatisfactory, most of it is from the Beck or a spring, the former receiving the contents of house drains. In the Guisborough Rural District steps are being taken to obtain a further supply to Castleton, a short time ago the reservoir was enlarged, but this failed to meet the requirements. In the Reeth District a new scheme has been completed at Reeth and the supply to Grinton improved. Dr. Tinley, Whitby Urban, writes, "The supply is from the high moorland, and is probably as pure as any supply in the county. It is a pity that it is not filtered through an efficient filtering bed, as in times of heavy flood there is a sediment after the water has stood in those parts of the town where there is a "blind end." No disease is ever traced to the water." A shortage occurred at Ellingstring in the Masham District, owing to the water being run off from the reservoir, in order that it might be cleaned out, just before the drought, Dr. Cockcroft, writes, "The excellent supply of water from the reservoir at Agra which supplies Masham, Fearby and Healey, is in some danger of being disturbed by the Leeds Corporation. The Leeds Corporation are promoting a Bill in Parliament to construct Waterworks in Colsterdale, the proposed site of their dam being some 200 yards further up the Valley than the Masham reservoir, the actual site of the dam may vary within certain limitations so that when they commence to make their trench there is a danger that the Masham supply may be tapped. At present the Leeds Corporation are sinking trial holes in the valley, and examining the strata of which the hillside is composed. We have enjoyed an excellent supply of water for 11 years from this spring, and I would strongly recommend your Council to safeguard and protect your supply from any interference from the Leeds Corporation's proposed waterworks." In the Northallerton Rural District a new well has been sunk at Appleton Wiske, and one at East Cowton, a shortage occurred at Osmotherley but leakages were discovered and remedied, and a scheme for the supply of Nether Siltan is being undertaken by voluntary effort. The lower portion of the Eston District suffered from a great scarcity of water. In the Croft District the water of the new well at Barton School is not satisfactory and is not being used, and that of a private well at Cleasby was reported bad and the well cleaned out. Dr. Baigent, Northallerton Urban, writes, "The water supply has continued of the same quality as in former years—pure, clear, soft, and excellent for both drinking and general domestic use. The quantity has unfortunately fallen far short of the average. The springs were running very low for lengthened periods during the unprecedented drought, and the reservoirs were almost exhausted. Great thought and skill required to be exercised to deal with this serious state of affairs in the most efficient and economical manner. All supplies other than domestic ones had to be cancelled, handbills were distributed calling attention to the great scarcity of water and requiring economy to be exercised, waste forbidden, and the supply was also turned off nightly at 8 p.m. from July 21st to October 20th. By these means the longest

"drought of modern years was successfully grappled with until the period of anxiety passed away. With the object of obtaining an additional water supply, Kepwick Beck was visited and inspected on March 31st, and for providing additional storage capacity it is proposed to construct a reservoir on Bulla Moor, and land for this purpose has been provisionally purchased." In the Helmsley District a Local Government Board Enquiry was held December 13th into the proposed scheme for the villages of Pockley, Beadlam, and Harome, and a joint scheme promoted by the Helmsley and Kirbymoorside Councils, unsatisfactory supplies are reported of Old Byland, Murton, and Sproxton. In the Oswaldkirk Division of the Helmsley District the supply is defective at Oswaldkirk, and one is needed for Oldstead. In the Pickering Rural District the supply to Thornton Dale has been augmented by a further spring, that of Wilton was deficient during the summer, but a private scheme is under consideration, Middleton, Aislaby and Wrelton are without a suitable supply, and Newton and Lockton are dependent on rain water caught in cisterns. In the Stokesley District wells have been condemned at Great Broughton, Oak Well, the High Green, Great Ayton and Castlelevington, but as no other supplies have been provided they are still in use, a supply has been provided for houses at Ingleby Greenhow, and the well at the East End of Hutton Rudby deepened. In the Flaxton District, the York Water has been laid on to Haxby and Wiggington, at Flaxton there was a marked shortage during the summer months. At Goathland in the Whitby Rural District, the supply which has been a source of trouble for some years, failed entirely for a period, owing to a serious leak in the reservoir, a temporary supply was obtained by pumping from an adjacent spring, but as this could not be used permanently, and other springs not being available, boring operations were undertaken which are likely to be costly, efforts are being made to obtain a supply for Goldsborough. In the Kirbymoorside District the supply to Kirbymoorside requires to be increased, the mains have been extended at Kirby Mills and Keldholme, Edstone is still without a wholesome supply, that of Gillamoor and Fadmoor is from an open water course, a scheme is in progress for Normanby, and a Local Government Board Enquiry has been held with a view of providing a scheme for the villages of Nawton, Skiplam, and Wombledon. New supplies have been obtained for Aysgarth and Cotterdale, and plans prepared for one for Newbiggin and Thoraby in the Aysgarth District. In the Thirsk District a well at Sowerby and one at Mannby were condemned, supplies being obtained from other sources. Dr. Eddison, Bedale, writes, "It is again my duty to bring before your notice the urgent need of a proper water supply for Bedale. Although I cannot point to any definitely contaminated water that is being used for drinking purposes, I still consider that the difficulties and inconveniences which at present prevent the inhabitants of Bedale from obtaining a good and plentiful amount of water have had much to do with the large amount of infectious disease in the town during the past year." In the Scarborough Rural District, the water of two wells at Seamer was found to be unfit for consumption, notices were served on the owners to close them. Dr. Williams, Richmond Rural, writes, "The Scheme for supplying the village of Newsham is still in abeyance, and although it was approved of by the Local Government Board in 1901, no steps have been taken during the last few years to carry out the same, which to any one cognisant of the importance of having pure water for dietetic purposes and the baneful and far reaching effects of drinking polluted water must be to say the least little short of amazement. The opponents to the scheme maintain there is plenty of pure water at a distance of a few hundred yards if the people will only go for it, which is perfectly true, but when there happens to be an ample supply close at hand, the temptation to use the same, although impure, is more than a great many persons are able to resist. In former reports I have dwelt on the unsatisfactory state of the Gayles Water and although you approved of a scheme for supplying the village about three years ago, and several meetings have since been held, I fear it is as far off of realization as ever."

SANITARY WORK.

Dr. Lighfoot, Leyburn District, writing of Leyburn says, "The drainage is not satisfactory, some of the house drains going into cesspools, even where a main drain runs only a few feet away. Many of the drains are badly trapped. The traps are antiquated and not kept clean. A good deal of the unpleasant odours which arise in the hot weather could be mitigated by having the drains thoroughly flushed once a week. This could be done until your new Sewage scheme is in working order." At Arrathorne the closets are all in the cowhouses. In the Guisborough Rural District small receptacles were erected at Danby End and Ainthorpe for house refuse, a cesspool built for the sewage of a few cottages at Ainthorpe, at Newton the sewer was diverted, nine inch glazed pipes being substituted for the ordinary field pipes, at Marske the stone conduit at the west side of High Street was replaced by 370 yards of nine inch glazed earthenware pipes with manholes and a flushing arrangement, also a supply of water laid on to the urinal, a cattle-drinking trough and hydrant (for street watering), and a cesspool built for a few cottages at Comondale, two houses were condemned as unfit for habitation, one was repaired, and in the case of the other instructions were given for legal proceedings to be taken to have it closed. At Guisborough forty-one new houses were occupied during the year and fourteen are in course of erection. In the Loftus District ventilating shafts have been placed in the sewer at East Loftus, plans of the proposed extension of the Loftus sewer so that it shall discharge direct into the sea have been prepared and submitted to the Local Government Board, and manholes and ventilating shafts placed in the sewer at West Loftus. At Redcar one hundred and forty-seven new houses have been occupied during the year and eighty are in course of erection, two cottages were condemned as unfit for habitation and were repaired, a method of refuse disposal has been suggested and will shortly be reported on, Dr. Stainthorpe, writes, "The rapid growth of the town and its position as a seaside resort render the provision of efficient hospital

"accommodation imperative." At Saltburn complaints were made of a nuisance arising from the escape of benzoline fumes from a laundry into water closets in Montrose Street. In the Skelton and Brotton District sixteen new houses were occupied during the year and fourteen are in course of erection, three were condemned as unfit for habitation and were repaired. Concerning the provision of an Isolation Hospital, Dr. Stainthorpe, writes, "A Joint Committee, consisting of members of the Redcar and Saltburn Urban Councils and of Councillors representing the parishes of Kirkleatham, Marske, Upleatham, and Wilton, had under consideration the provision of a joint infectious diseases hospital. A suitable site was provisionally obtained. Plans and estimates of a hospital consisting of an administration block, scarlet fever and diphtheria blocks, etc., were laid before the Committee. These were approved of and forwarded to the individual Councils for their consideration. At a special Meeting of the Redcar Council held on December 18th, it was resolved by 5 votes to 4 not to proceed with the scheme. At the same meeting a Committee was appointed to consider and report upon (1) such improvements as would render the present sanatorium (a cottage) more efficient, (2) the provision of a new hospital to serve the district of Redcar alone. The Sanitary Committee of the Redcar Council recommended at a meeting held on December 27th that the Medical Officer report on the cost, etc., of the erection of a hospital (joint) on the proposed site, constructed of iron and wood." In the Reeth District improvements have been made in the drainage of Grinton. At Whitby a large number of ventilating shafts have been connected with the sewers, Dr. Tinley, writes, "In my last Report I referred to the proposed sewerage scheme; this is waiting, as, at present, the Council has under consideration extensive alterations to the Harbour, and it would be unwise to do anything to the sewage outfalls until this scheme is settled upon." At Malton the pail system of excrement disposal has been gradually extended, replacing the old middens, writing on house accommodation in the district, Dr. Mainwaring Holt says, "I am glad to report that there is a general improvement in the working-class dwellings throughout the district, in many cases two cottages have been made into one dwelling with distinct advantage to the inmates. Taking the district as a whole there is ample space about the dwellings, many having a large amount of garden space. The old-fashioned small cottages are gradually being replaced, and those existing are not let to persons having large families. There is still a want for more up-to-date dwellings at a small rental, but the problem of building them to pay is not easy of solution in this district. It has not been found necessary to take any action under the 'Housing of the Working Classes Act' during the year." Improvements are being made in the drainage of Kirklington. Dr. Cockcroft, Masham, writes, "In last year's annual report I described a small Isolation Hospital which the Leeds Corporation had built near Breary Banks for the benefit of their settlement there. Up to the present time there has been no use for it. Your Council approached the Leeds Corporation to see if it could be used for the benefit of the residents in Masham U.D.C., but unfortunately these negotiations were allowed to fall through. . . . A sum of money has been left by the late Lord Masham to be spent for the benefit of the inhabitants of Masham, and no greater benefit could accrue to the Masham people than the provision of an Isolation Hospital." In the Wath District complaint was made of a nuisance arising from a sewage tank at Dishforth adjacent to a house, steps are being taken to remove the tank, two cases of overcrowding occurred at Cundall, one house was closed and the other is to be improved. In the Northallerton Rural District the following work has been completed at Brompton, 255 yards of 9in. jointed earthenware sewer, with one settling tank, two inspection chambers and ventilating shaft, 168 yards of 9in. sewer, 134 yards of 6in. sewer, two new settling tanks, two old ones rebuilt, with cast-iron air-tight covers, four inspection chambers, five surface water grates with chambers, and four 6in. ventilating shafts. The settling tanks are provided with a dip pipe at the outlet for the interception of scum and other floating matter, and a special diaphragm pump for emptying the tanks is on order. At Cowton the Railway Company have provided a siding in a more suitable position for the delivery of animal refuse, and have issued instructions that the manure is not to remain in the siding over Sundays. Faulty sewers formed of common field pipes are still to be found at Brompton, Welbury, Great Smeaton, and Borrowby, a portion of the village of Ainderby Steeple is unprovided with a sewer, the outfalls of the sewers at Morton-on-Swale, Brompton, and Appleton Wiske give rise to serious nuisance in summer time, and should be carried further away, in other parts of the district certain house drains discharge direct into roadside ditches. Dr. Hutchinson writes, "Throughout the summer and autumn months the nuisance and danger to health arising from the pollution of Romanby Beck by Northallerton sewage is as great as ever. At the present time however, steps are being taken for the better treatment of Northallerton sewage at a point below the village of Romanby." In the Eston District the stream on the south side of the Cemetery, which receives the outfall from the Hewley Street sewer, became very foul, and created a great public nuisance for a considerable distance down Eston Road, a scheme has been prepared for carrying this sewage from the outfall to the existing sewer behind Bolckow Terrace, and the work is now in progress. At Scalby the new main sewer has been laid along High Street, North Street, South Street, Scalby Road, and the road past the Church, and branch sewers along Coldy Hill Lane and Hackness Road, the sewers are ventilated by road grates and shafts. Dr. Forman writes, "Complaints have been received during the year about the pig styes at Peasholme, principally from the Military Authorities. In the premises large quantities of manure remain and rot giving rise to effluvia. The condition of the buildings is bad, they are very old and saturated with manure, the partitions and divisions of the styes are, for the most part, made of wood, rotten with age in the majority of cases. The walls are deficient in cement, and the use of limewash is, to say the least, infrequent. The buildings are too close to the road, and, to be made sanitary, practically

“require to be rebuilt. The drainage of some of the buildings is defective, and most of them are without drains altogether, the washings of the styes being swept outside, and, in the majority of the buildings, having to get away as best they can. Some of the yards have brick flooring mostly in a shattered condition, causing the water to lodge and stagnate. Even if the owners of the buildings comply with our requests and make the premises sanitary, I consider they will always be a source of annoyance, and the only means of making the district innocuous to the public health is to raze the buildings to the ground and not rebuild them.” In the Croft District the Barton Beck is in a bad state and requires cleaning out. At Ormesby considerable lengths of new sewerage have been laid. At Northallerton the length of old sewer from the Parish Church to the Post Office has been relaid with sanitary pipes, and ventilating shafts erected at the north and south ends of the sewer, and at the junction of the sewers near the Rutson Hospital, Dr. Baigent, writes, “No alteration in the treatment of the sewage at the Sewage Works, has taken place since the last annual report. Some sludge is deposited in the tanks, and the effluent which is not satisfactory is discharged into the Romanby Beck. The Beck was running very low during the protracted drought of the autumn, and the whole length of this water-course to its junction with the Wiske was then most offensive as a result of sewage contamination. It is most disappointing it has not been possible to make a commencement with the new sewage scheme. Land was selected, plans were prepared, and a further Local Government Board enquiry was held on March 21st. Pumping of the sewage on to the filter beds was found by the Engineer to be necessary, and the Council also wished to be reassured that in any system they might decide to adopt, there would be some guarantee that the tanks would not deposit sludge in such quantities as to interfere with their efficiency, and the filter beds would not choke to such an extent as to require frequent renewal. It was therefore decided to visit and make an inspection of some works where sewage of similar quality and quantity was efficiently treated, and where the scheme had been in working order for such a length of time that reliable data could be obtained, and where the condition of the works after a lengthened trial could be seen. With this object, Darfield Sewage Works were visited by members of the Council on December 8th, and the condition of the works and the character of the effluent noted.” In the Helmsley District a sewage scheme has been completed at Hawnby, but one is required for Harome, whilst in the Oswaldkirk Division of the Helmsley District the sewage disposal arrangements at Ampleforth, Stonegrave and Gilling are condemned. At Cropton in the Pickering Rural District a length of main sewer has been laid. In the Stokesley District, the manholes of the sewer at Great Ayton have been closed and two ventilating shafts erected, but more are required, the sewer at the North End at Great Broughton has been extended and laid with 190 yards of 8in. pipes, the Crow-bank sewer at Hutton Rudby partly relaid and extended 120 yards with 6in. pipes, at Swainby the dam for flushing the main sewer has been rebuilt in cement concrete, and a new flushing valve fixed with man-hole chamber and cover, and at Kirklevington arrangements are being made for commencing the work of the new sewage disposal scheme. In the Flaxton District a combined sewerage scheme is in preparation for certain villages in the area, the sewage disposal arrangements for the East End of the village of Strensall are unsatisfactory. In the Whitby Rural District the condition of the drains at Eastrow is unsatisfactory and during the summer the beck near Thorpe was in a filthy condition, writing of Goathland, Dr. Laverick, says, “The proposal to construct a sewerage system and a sewage disposal works is, I consider, unjustifiable at present. I fully recognise that theoretically the sewage from every village, even from every house, should be purified before entering a stream. But, in practice, I think we should consider ways and means and degrees of theoretical necessity. Goathland is built on so wide an area and so many levels that the cost of sewers, etc., will be more than such a parish should be asked to pay for so small a need. A rate of two shillings for sewerage purposes, in the face of an indefinite expenditure, which must be undertaken for a water supply, seems to me to be unreasonable.” In the Kirbymoorside District a new sewer has been constructed at Dale End, Kirbymoorside, and new irrigation beds laid down at Kirby Mills. In the Easingwold District a considerable number of connections have been made with the main sewer, the open grates of which it is proposed to close and substitute ventilating shafts. In the Aysgarth District a new sewerage scheme with septic tank and filter bed has been completed at Sedbusk, a septic tank, filter beds, and sprinkler replace the old settling tanks at Hawes, and a new scheme is to be provided for Countersett, at Appersett the sewage is carried by an old stone drain directly into the river. In the Thirsk District a house at Humberton was found to be unfit for habitation, and dealt with, the carcase of a beast was condemned and destroyed, at South Otterington the sewer leading to the school was relaid with 6 in. sanitary pipes, the main sewer at Cowesby extended 50 yards, a sewer 205 yards in length of 6 in. sanitary pipes laid at Birdforth, the sewer at Jackson’s Terrace, Thirsk, relaid with 8 in. sanitary pipes, and bacterial tanks constructed at Sowerby, Norby, Sandhutton, and Birdforth. The sewage disposal works at Thornton-le-Moor are reported to be working satisfactorily, the tanks are now covered in, and the sewage filtered through gravel trenches. Dr. Buchanan writes, “In July a report was desired by the Sanitary Authority on the ‘pollution’ of the Codbeck by the sewage of Norby, Thirsk, and Sowerby. The effluents from these districts discharging into the Codbeck were inspected, and in every case there was found to be little sediment near the outfall of the drains. The drains are well and regularly flushed. Dealing with the source and composition of the sewage we find that in Sowerby and Thirsk including Norby there are 1183 inhabited houses (census 1901). Of these quite two-thirds have dry closets and ashpits, the excreta and refuse being thus disposed of. The remainder of the houses are supplied with ordinary sanitary fittings. During the present year a sample of water was taken at a point about 5 miles below the town, which on chemical analysis was found to be pure and fit for drinking purposes, thereby

“showing that whatever contamination takes place locally is quite inappreciable a comparatively short distance down the stream. Since the completion of this report a Bacterial Tank has been built in the Holmes through which the whole of the Norby sewage passes before entering the stream.” No steps have yet been taken for treating the sewage at Hinderwell, which still pollutes the beck. In the Scarborough Rural District 400 yards 9 in. and 80 yards 6 in. new sewer have been laid at Hutton Bushel, and an extension made at East Ayton. Dr. Williams, Richmond Rural, writes, “A number of the villages are fairly well drained, some moderately so, while others have no public drains of any description with the exception of a few highway drains. What with the present apathy of the inhabitants of some of the villages, and the dread of the members of the Parish Councils and Parish Meetings of incurring any expense, I fear it will be some years before the drainage of the district is in a satisfactory state.”

MIDWIVES ACT, 1902.

During the year the names of 80 midwives were placed on the roll against 79 in 1905, four of whom registered for the first time.

The following left the County during the year :—

February 5th.—Elizabeth Robson, Lingdale to Middlesbrough.
 April 27th. —Sarah Ann Johnson, Brompton R.S.O. to Manchester.
 June 13th. —Alice Blake, Scarborough to Harrogate.
 August 31st. —Janet Lambert, Grimescar, Bedale to Aldershot.
 December 20th—Mary Jane Brown, Scarborough to Lindley.

RECORDS RECEIVED.

Still-births 9, Miscarriages 5, Premature Birth 6, Death of Child 1, Puerperal Septicæmia 1, Hyperpyrexia 1, Retained Placenta 3, Difficult Delivery, medical aid, 4.

One hundred and thirty-eight visits of inspection were made, during which I was pleased to notice considerable improvement in the manner in which the work of the respective midwives was carried out. They are now clean in their apparel and appearance, keep their bags and appliances clean, are supplied with antiseptics with the use of which they are now familiar, and most of them send in their “records” promptly, although a few still make default in this requirement. Their registers are well kept. That some supervision of the work of midwives is desirable is amply evidenced by the fact that during the year 1282 cases were attended by registered midwives. One at Thornaby attended 198 cases, one at North Ormesby 127, one at Thornaby 86, one at North Ormesby 57, one at Thornaby 52, one at Grangetown 52, one at Thornaby 46, one at Margrove Park 46, one at Scarborough 43, one at Redcar 40, one at Skelton 40, one at Thornaby 36, one at Scarborough 32, and one at Huntington 30.

Notices of removal and copies of all reports to the Local Supervising Authority are sent to the Central Midwives Board. Copies of the official roll were sent to the Local Supervising Authority and Central Midwives Board on January 1st, 1907.

I have the honour to be,

My Lords and Gentlemen,

Your obedient Servant,

W. H. CHEETHAM, M.D., D.P.H.

Guisley, 1st April, 1907.

APPENDIX. NORTH RIDING OF YORKSHIRE.

<u>URBAN AUTHORITIES.</u>	Deaths.										Cases notified.															
	Population at all ages.		Birth Rate	Death Rate.	Zymotic Death Rate.	Infantile Mortality per 1,000 Births.	Measles.	Scarlet Fever	Diphtheria and Membranous Croup.	Whooping Cough.	Small Pox	Enteric Fever.	Other or doubtful Fevers	Diarrhoea.	Cholera.	Croup.	Krysipelas.	Puerperal Fever	Isolation Hospital	Scarlet Fever	Diphtheria.	Typhoid Fever.	Continued Fever.	Membranous Croup.	Erysipelas.	Puerperal Fever	Small Pox.

Eston (2,252) G. C. H. Fulton, M.D.	...	11,199	12,780	31.53	18.14	2.34	157.4	1	2	7	9	...	1	10	...	...	...	...	Yes	112	62	32	...	...	...	11	1	...
Guisborough (6,120) W. W. Stainthorpe, M.D., D.P.H.	...	5,645	6,000	32.83	18.16	0.16	132.9	...	1	...	...	...	...	4	...	...	...	...	Yes	26	...	...	...	...	...	22	...	...
Hinderwell (1,600) J. B. Laverick, M.D., D.P.H.	...	1,957	2,200	20.9	13.18	0.00	108.0	...	...	...	...	...	...	...	...	...	...	...	No	...	...	...	...	...	...	...	...	...
Kirklington and Upsland (2,000) ... T. Sayer, M.R.C.S., L.R.C.P.	...	250	250	28.00	28.00	4.00	285.7	...	...	1	...	...	...	...	...	...	...	...	No	1	2	...	...	...	...	...	...	...
Lofus (2,658) W. W. Stainthorpe, M.D., D.P.H.	...	6,508	7,500	37.20	16.80	0.53	150.5	2	1	...	1	...	...	11	...	...	1	...	Yes	22	2	...	...	...	...	6	...	...
Malton (4,130) H. M. Holt, M.R.C.S., D.P.H.	...	4,758	4,758	23.95	16.39	0.42	140.0	...	...	...	1	...	...	1	...	...	...	...	No	12	1	1	...	...	...	2	...	...
Masham (16,758) H. M. Cockcroft, M.R.C.S., L.R.C.P.	...	1,955	1,955	37.85	17.39	0.51	67.56	1	...	...	...	...	...	...	...	...	...	...	No	3	...	...	...	...	...	3	...	...
Northallerton (3,367) W. Baigent, M.D.	...	4,009	4,129	28.8	15.2	1.21	100.8	...	...	...	...	...	...	5	...	1	...	...	Yes	4	20	2	...	1	...	2	...	...
Ormesby (4,403) H. W. Jackson, M.D., D.P.H.	...	9,482	12,000	41.1	22.0	5.9	200.0	1	4	6	13	...	3	44	...	...	...	...	Yes	161	33	13	...	...	...	6	...	...

URBAN AUTHORITIES.

Deaths.

Cases notified.

DISTRICT. Area in Acres.	Population at all ages		Birth Rate.	Death Rate.	Zymotic Death Rate.	Infantile Mor- tality per 1000 Births	Measles.	Scarlet Fever.	Diphtheria and Membranous Group.	Whooping Cough.	Small Pox.	Enteric Fever.	Other or doubtful Fevers.	Diarrhoea.	Cholera.	Group.	Erysipelas.	Puerperal Fever.	Isolation Hospital.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Continued Fever.	Membranous Group.	Erysipelas.	Puerperal Fever.	Small Pox.	Influenza, 1 death
	Census, 1901.	Estimated to middle of 1906.																										
Pickering (14,280) D. W. Robertson, M.R.C.S., L.R.C.P.	3,491	3,500	24.2	13.7	0.57	105.8	...	1	...	...	...	1	...	...	...	...	...	...	No	60	...	1	...	...	1	...	...	...
Redcar (1,630) W. W. Stainthorpe, M.D., D.P.H.	7,695	10,000	22.70	11.70	0.60	96.9	..	...	2	4	...	...	...	8	...	...	...	...	Yes	42	42	1	...	...	5	...	...	...
Saltburn (600) W. W. Stainthorpe, M.D., D.P.H.	2,578	3,500	14.85	8.85	0.28	115.4	...	...	1	..	...	...	...	1	...	...	...	..	Yes	13	4	...	...	...	...	...	...	...
Scalby (3,333) B. G. Forman, M.B.	1,262	1,350	20.00	13.33	0.00	37.0	...	...	...	...	...	...	...	...	...	...	...	...	Yes	5	7	...	...	...	...	...	...	...
Skelton and Brotton (16,699) W. W. Stainthorpe, M.D., D.P.H.	13,240	13,500	34.37	14.81	0.33	150.8	...	...	4	1	...	...	...	9	...	...	...	...	Yes	34	9	1	...	...	8	...	...	...
South Bank in Normanby (1,781)... J. Glen, M.B.	9,645	10,460	42.64	22.08	3.25	175.0	...	1	11	7	...	2	2	11	...	1	...	...	Yes	67	32	22	33	2	21	...	1	...
Thornaby-on-Tees (1,993) T. Watson, M.D.	16,053	16,000	41.37	20.68	4.7	169.8	...	3	9	11	...	4	...	43	...	...	...	...	Yes	115	32	23	...	11	18	2	...	...
Whitby (2,009) W. E. F. Tinley, M.D.	11,748	11,748	23.5	13.4	0.34	126.0	...	...	...	4	...	...	...	...	...	...	...	1	Yes	44	13	2	...	...	17	3	...	Mumps

RURAL AUTHORITIES.

Deaths.

Cases notified.

DISTRICT. Area in Acres.	Population at all ages		Birth Rate.	Death Rate.	Zymotic Death Rate.	Infantile Mor- tality per 1000 Births.	Measles.	Scarlet Fever.	Diphtheria and Membranous Croup.	Whooping Cough.	Small Pox.	Enteric Fever.	Other or doubt- ful Fevers.	Diarrhoea.	Cholera.	Group.	Erysipelas.	Puerperal Fever	Isolation Hospital!	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Continued Fever	Membranous Croup	Erysipelas.	Puerperal Fever	Small Pox.	
	Census, 1901.	Estimated to middle of 1906.																										
Aysgarth (81,012) E. M. Hime, M.B., CH.B.	...	4,506	21.52	13.32	0.44	72.1	...	...	...	...	...	2	...	...	...	...	...	...	No	18	7	2	...	...	7	1	...	Mumps
Bedale (40,530) F. R. Eddison, M.R.C.S., L.R.C.P.	...	6,794	23.99	14.71	1.91	123.3	...	...	5	7	...	1	...	...	...	...	...	...	Yes	7	37	4	...	...	3	1	...	Influenza, 3 deaths
Croft (19,844) B. W. Swenden, M.R.C.S., L.R.C.P.	...	2,107	24.6	9.9	0.00	96.0	...	...	...	...	...	...	...	...	...	...	...	...	Yes	...	4	...	...	...	...	...	...
Easingwold (70,208) E. B. Hicks M.R.C.S., L.R.C.P.	..	9,909	24.08	13.5	1.32	88.9	3	...	5	3	...	...	..	2	...	...	...	...	No	13	50	1	..	...	9	1	...	Influenza, 1 death
Flaxton (30,309) A. Raines, M.B.	...	6,924	21.5	11.5	0.00	81.0	...	...	...	...	...	...	...	...	...	...	...	...	Yes	5	7	7	...	..	6	...	...	Chicken Pox
Guisborough (50,754) W. W. Stainthorpe, M.D., D.P.H.	...	7,754	25.44	16.32	0.88	169.0	...	3	2	2	...	...	...	9	...	2	...	...	Yes	43	14	3	...	...	4	...	...
Helmstey (51,598) J. F. Porter, M.D.	..	3,391	27.7	10.3	0.00	42.5	...	...	...	..	..	...	...	...	...	...	...	...	No	1	...	...	...	...	3	...	...
Helmstey (16,043) (Oswaldkirk District) J. F. Porter, M.D.	...	1,785	16.8	10.0	0.00	33.3	...	...	...	...	...	...	...	...	...	...	...	...	No	10	...	...	...	...	...	...	...

RURAL AUTHORITIES.

Deaths.

Cases notified.

DISTRICT. Area in Acres.	Population at all ages		Birth Rate.	Death Rate.	Zymotic Death Rate.	Infantile Mor- tality per 1000 Births.	Measles.	Scarlet Fever.	Diphtheria and Membranous Group.	Whooping Cough.	Small Pox.	Enteric Fever.	Other or doubt- ful Fevers.	Diarrhoea.	Cholera.	Group.	Erysipelas.	Puerperal Fever.	Isolation Hospital.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Continued Fever.	Membranous Group.	Erysipelas.	Puerperal Fever.	Small Pox.		
	Census, 1901.	Estimated to middle of 1906.																											
Kirbymoorside (58,631) T. Walsh Tetley, M.R.C.S., L.R.C.P.	4,791	4,791	22.9	14.4	0.83	109.0	1	...	...	2	...	...	...	1	...	...	...	...	No	24	3	...	...	...	...	...	...	...	Epidemic Catarrhal Jaundice
Leyburn (51,202) J. P. Lightfoot, M.R.C.S., L.R.C.P.	6,180	6,180	19.35	15.23	0.16	57.8	...	...	...	1	...	...	...	...	...	...	...	...	No	12	1	2	...	...	2	...	...	...	Influenza, 2 deaths
Malton (43,330) J. G. E. Colby, M.B., F.R.C.S., D.P.H.	6,116	5,845	21.8	11.6	0.51	85.9	...	...	1	...	...	...	...	2	...	...	1	...	No	18	24	3	...	...	7	...	...	...
Middlesbrough (11,048) H. Fawcett, M.D.	2,091	2,091	18.17	8.60	0.00	52.6	...	...	...	...	...	...	...	...	...	...	...	...	Yes	3	...	...	...	...	...	...	...	...
Northallerton (63,350) J. A. Hutchinson, M.D.	7,581	7,652	22.2	13.98	0.65	100.5	...	1	2	...	...	...	...	2	...	1	...	...	Yes	10	21	3	...	...	5	...	...	...	Influenza, 1 death 1 death from Human Anthrax
Pickering (68,805) R. A. Scott, L.R.C.S., L.R.C.P.	6,567	6,567	26.03	12.8	0.76	97.4	1	1	1	...	...	...	...	2	...	...	...	...	No	11	13	...	...	1	2	...	...	...
Reeth (74,844) M. E. Thompson, L.R.C.S., L.R.C.P.	2,520	2,520	15.87	17.85	0.36	125.0	...	...	...	1	...	...	...	...	...	...	...	...	No	1	...	1	...	...	1	1	...	...	Influenza, 9 deaths
Richmond (76,228) H. Williams, M.R.C.S., L.R.C.P.	7,889	7,889	24.97	13.68	0.50	81.2	...	...	1	1	...	...	...	2	...	...	...	...	No	12	24	6	...	...	7	...	...	...	Influenza, 3 deaths

RURAL AUTHORITIES.

Deaths.

Cases notified.

DISTRICT. Area in Acres.	Population at all ages		Birth Rate.	Death Rate.	Zymotic Death Rate.	Infantile Mor- tality per 1000 Births.	Measles.	Scarlet Fever.	Diphtheria and Membranous Croup.	Whooping Cough.	Small Pox.	Enteric Fever.	Other or doubt- ful Fevers.	Diarrhea.	Cholera.	Croup.	Erysipelas.	Puerperal Fever	Isolation Hospital.	Scarlet Fever.	Diphtheria.	Typhoid Fever.	Continued Fever	Membranous Croup	Erysipelas.	Puerperal Fever	Small Pox.			
	Census, 1901.	Estimated to middle of 1906.																												
Scarborough (60,225) G. J. B. Candler-Hope, M.B.	...	6,498	6,462	20.27	15.62	0.77	145.8	...	1	...	...	1	...	3	...	...	...	...	...	Yes	11	7	1	...	...	2	...	...	...	1 case of Human Anthrax, Chicken Pox
Startforth (97,402) J. C. Nelian, L.R.C.S., L.S.A	...	5,014	5,373	12.28	15.63	0.18	181.8	...	1	...	...	...	...	...	...	...	...	...	...	Yes	1	5	1	...	...	2	...	...	...
Stokesley (83,010) W. M. Yeoman, M.B.	...	11,257	11,257	23.0	14.83	1.24	100.3	1	...	4	3	1	...	5	...	...	...	...	...	Yes	37	18	1	...	...	2	...	...	...	Influenza, 4 deaths
Thirsk (64,024) W. I. Buchanan, M.B.	...	12,710	12,710	25.49	14.71	0.55	89.5	4	1	1	...	1	...	...	...	...	1	1	No	46	7	3	...	...	5	...	...	...	...
Wath (16,997) T. Collier, M.R.C.S., L.R.C.P.	...	2,149	2,149	25.6	16.7	0.93	90.9	...	...	...	...	...	...	2	...	...	...	...	Yes	..	1	1	...	...	...	...	...	...	...	Influenza, 1 death
Whitby (89,000) J. B. Laverick, M.B., D.P.H.	...	8,051	8,500	22.56	18.5	0.94	124.0	...	2	2	...	1	...	3	...	...	...	...	No	14	15	7	...	...	6	1	...	...	...

